

### **REMARKS**

By the present amendment, claims 15 – 17 have been withdrawn and claims 1 and 5 have been amended. Claims 1 - 14 and 18 - 19 are now pending.

#### **Amendments to the Claims**

Support for amendments to claims 1 and 5 can be found for example, throughout the specification, for example: page 12, lines 23 – 27 and Table 2.

All amendments and cancellations are made without prejudice or disclaimer. Applicant explicitly retains the right to pursue any deleted subject matter in one or more continuation applications. No new matter has been added by any of the amendments.

#### **Objections to the Specification**

The disclosure was objected to because of embedded hyperlinks and/or other form of browser-executable code at least at pages 6 and 19 of the specification. The paragraphs on page 6, lines 1-26 and page 19, lines 1-14 have been amended to remove the hyperlink text. The objection is requested to be removed.

#### **A. REJECTION UNDER 35 U.S.C. § 102(b)**

**Claims 1 – 14 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Shilling et al. (J. Immun., Vol. 168, pp. 2305-2315, 2002).**

Claims 1-14 have been rejected under 35 USC 102(b) as allegedly being anticipated by Shilling et al. (J. Immun., Vol. 168, pp. 2305-2315, 2002, herein “Shilling”). The Examiner has argued that Shilling teaches “a primer set of claims 1-7, 11, for identifying KIR allele comprising one or more primer pairs to produce an amplicon that is less than or 1000 bases in length from a nucleic acid that encodes intra-exon portion or an extracellular portion of KIR (see page 2310, col. 1, paragraph 1-2, page 2309, Fig. 1, page 2311, Fig. 2 indicating intra-exon portion and extracellular portion of KIR)” The Examiner cites page 2309, Fig. 1 of Shilling for the alleged teaching of amplicon length ranges from less than 1000 to greater than 2000 bases in rejecting claims 8-10, 13-14 and page 2311, Fig. 2 indicating exons 3-5, and 9 for the alleged teaching of the intra-exon or extracellular portion of the KIR receptor is

encoded by any one of the KIR exons 1-8 (Office Action of March 16, 2010, page 3). Applicants respectfully traverse the rejection because Shilling does not teach KIR allele KIR1D.

It is settled law that a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in complete detail as contained in the...claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

As amended, independent claims 1 and 5 recite, "... a KIR, wherein the set produces an amplicon for at least KIR1D. Shilling does not teach the KIR allele KIR1D. Thus, Shilling et al. does not anticipate independent claims 1 and 5 and the claims that depend either directly or indirectly therefrom. Withdrawal of the rejection of Claim 1 – 14 as being anticipated by Shilling et al. (J. Immun., Vol. 168, pp. 2305-2315, 2002) is respectfully requested.

**B. REJECTIONS UNDER 35 U.S.C. § 103(a)**

**Claims 18-19 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Shilling et al. (J. Immun., Vol. 168, pp. 2305-2315, 2002) in view of Stratagene Catalog (Stratagene Catalog, p. 39, 1988).**

Claims 18-19 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Shilling in view of Stratagene Catalog (herein "Stratagene). Applicants respectfully disagree and traverse this rejection for the following reasons.

**The Combination of Shilling and Stratagene Does Not Teach All the Limitations of Applicant's Independent Claim 5**

Claim 18 is directed to a "kit for detecting one or more KIR alleles comprising the primer set of claim 5" and Claim 19 is directed to a "kit for detecting one or more KIR alleles comprising the primer set of claim 7." Independent Claim 5 has been amended to recite, "...a KIR, wherein the set produces an amplicon for at least KIR1D." Claim 7 depends from claim 6 which depends directly from claim 5 and thus claim 7 includes all the limitations of both claims 5 and 6. Therefore the kits of claims 18 and 19 also include the limitations of claim 5 (claim 18) and claims 5-7 (claim 19).

Applicant submits that neither Shilling nor Stratagene, taken alone or in combination, teach Applicant's kits for detecting one or more KIR alleles comprising the primer set of claim 5 or claim 7.

As discussed *supra* Shilling neither teaches nor suggests a primer set for detecting an amplicon for at least KIR1D as recited in Applicant's independent claim 5 nor does Shilling teach a kit comprising KIR primers. Stratagene does not cure the deficiencies of Shilling and was cited simply for the teaching of a kit for gene characterization.

Therefore, Applicant submits that since Shilling and Stratagene in combination do not disclose all the limitations of independent claims 18 and 19 nor the limitations of independent claim 5 and claims 18-19 each depend directly or indirectly from claim 5, it follows that pending claims 18 and 19 are not obvious under 35 U.S.C. § 103(a) over the combination of Shilling and Stratagene. Accordingly, for this reason alone, Applicant requests withdrawal of the rejection of claims 18 and 19 under 35 U.S.C. § 103(a) as being obvious over Shilling in view of Stratagene.

### **CONCLUSION**

It is respectfully submitted that the application is in condition for allowance. A notice of allowance is therefore respectfully requested. If any issues remain that can be resolved by phone, Applicants request that the Examiner contact the undersigned at (650) 554-3460.

### **FEE AUTHORIZATION**

Applicants believe that no additional fees are required with this response. However, if any additional fees are required for timely entry of this amendment, please take such fees from Deposit Account No. **50-3994 (Order No. IVGN 607 US)**. Any deficiency or overpayment should be charged or credited to this deposit account.

Respectfully submitted,

Date: August 4, 2010

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**Enclosure: Attachment A-** Replacement for Table 2

Table 2

Well #	KIR Allele Specificity	SEQ ID NO	Sense Primer	Sense primer 3' end location	Antisense Primer	Antisense primer 3' end location	Exon target	Internal Control size (bp)	App. PCR product size (bp)
1	2D1*1001-005	1	CATCAGTCGCATGACG	558	GGTCACTGGGAGCTGACAC	616	ex4	800	95
2	2D1*1001-004	3	AGAAACCTCTCTCTACGCCA	886	GCCCTGCAGAGAACCCTACAA	790	ex5	800	145
3	2D1*1001-006	5	CTTCATCGCTGGTGCTG	1094	CAGGCTCTTGGTCCATTACAA	1112	ex7-8	800	455
4	2D1*1001/01/01/02/00201/0202	7	GGTCTATATGAGAAACCTTCGCTTA	679	AGCCGAAAGCATCTGTAGGTCT	886	ex5	800	230
5	2D1*1001/01/02/002-004	9	AGGTCTATTTGGGAAACCTTCA	675	ACTCATAGGTGAGTCAATGGAG	889	ex5	800	257
6	2D1*1001-001	11	ACCATGTGCGTCATGGTCA	15	CACAGGGCCCATGAGGAT	238	ex1-3	800	1753
7	2D1*1001-003	13	CGTCACCCCTCCCATGATGA	5'UT	CACAGGGCCCATGAGGAT	238	ex1-3	800	1893
8	2D1*1001-004	15	CTTCTCCATCAGTCGCAAGAA	557	AGGCTGCTGGGAGCTGAC	616	ex4	800	140
9	2D1*1001-005	17	TGCACAGAGAGGGGAAGTA	557	CGGACACTCTCACCCTGTGATG	648	ex4	800	207
10	2D1*1001/01-00103	20	ACCTTGTCTGCAGCTCCT	739	GAAGCATCTGTAGGTTCTCTCT	861	ex5	800	162
11	2D1*1001/01/01/02/002	22	CAGTCTCCGAGCTCCCTA	749	TGACGGAACACAGCAGTGGGA	927	ex5	800	215
12	2D1*1001/01/01/02/002	24	CCTTGTCTGAGCTCCCTA	763	TGACGGAACACAGCAGTGGGA	927	ex5	800	200
13	2D1*1001-003	26	AGAGAGGGGACGTTTAACC	487	TCCAGAGGGTCACTGGGC	624	ex4	800	179
14	3D1*1001/01/01/02/0020	28	TGAGCACTCTTCTGCAAAA	470	GTAGTCCCTGCAAGGCAAA	560	ex4	800	129
15	3D1*1001-012	30	AACCCCTCTGCTCTGCC	100	GGAGATGGGAAAGCTGGC	197	ex3	800	133
16	3D1*1001/01/01/02/0020	32	CCTGCAATGTTGGTCAGATG	442	GAGCCGACAACTCATATGGGTA	605	ex4	800	203
17	3D1*1001/01-014	34	CGCTGTGTGCTGCTGCG	123	ACCTGTGACCATGATACCAT	337	ex3	800	250
18	2D1*1001/002	36	ACATGTGATCTCTGCTGTCAT	150	TGTGACCCCGACATCTGTAC	276	ex3	800	171
19	3D1*1001/002	38	CTTTCAGGGGTTCTTCTGCTGC	49	GAAACGGGTGTTTGGGATAC	223	ex2-3	200	975
20	3D1*1001/00302	40	TGCGCTGCTGAGCTGAG	5'UT			ex1-3	200	344
	Negative Control							NONE	200
									800